

August 12, 2015



U.S. Department
of Transportation

**Pipeline and Hazardous
Materials Safety Administration**

East Building, PHH – 30
1200 New Jersey Avenue, Southeast
Washington, D.C. 20590

DOT-SP 15788
(THIRD REVISION)

EXPIRATION DATE: May 31, 2019

(FOR RENEWAL, SEE 49 CFR § 107.109)

1. GRANTEE: Amtrol - Alfa Metalomecanica, S.A.
Guimaraes, Portugal,
(U.S. Agent: Amtrol, West Warwick, RI)
2. PURPOSE AND LIMITATIONS:
 - a. This special permit authorizes the manufacture, marking, sale and use of a non-DOT specification fully wrapped, carbon-fiber reinforced, seamless carbon steel lined cylinder, designed in accordance with the ISO 11119-2 standard except as specified herein, for the transportation in commerce of the materials authorized by this special permit. This special permit provides no relief from the Hazardous Materials Regulations (HMR) other than as specifically stated herein. The most recent revision supersedes all previous revisions.
 - b. The safety analyses performed in development of this special permit only considered the hazards and risks associated with transportation in commerce. The safety analyses did not consider the hazards and risks associated with consumer use, use as a component of a transport vehicle or other device, or other uses not associated with transportation in commerce.
3. REGULATORY SYSTEM AFFECTED: 49 CFR Parts 106, 107 and 171-180.
4. REGULATIONS FROM WHICH EXEMPTED: 49 CFR §§ 173.302a(a), 173.304a(a), 178.71, 180.205 and 180.207 in that a non-DOT specification cylinder is not authorized except as specified herein.

August 12, 2015

NOTE: This does not relieve the holder of this special permit from securing an approval for manufacturing cylinders from the Associate Administrator for Hazardous Materials Safety.

5. BASIS: This special permit is based on the application of Amtrol-Alfa, Metalomecanica SA dated June 23, 2015, submitted in accordance with § 107.109.

6. HAZARDOUS MATERIALS (49 CFR § 172.101):

Hazardous Material Description			
Proper Shipping Name	Hazard Class/ Division	Identification Number	Packing Group
Air, compressed	2.2	UN1002	N/A
Argon, compressed	2.2	UN1006	N/A
Carbon dioxide	2.2	UN1013	N/A
Nitrogen, compressed	2.2	UN1066	N/A
Oxygen, compressed	2.2	UN1072	N/A
Helium, compressed	2.2	UN1046	N/A

7. SAFETY CONTROL MEASURES:

a. PACKAGING - The prescribed packaging is a non-DOT specification fully wrapped, carbon-fiber reinforced, welded carbon steel lined cylinder with a maximum outer diameter of 322 millimeters (10.63 inches) and a maximum water capacity of 20 Liters (1221 cubic inches); and a service pressure of 300 bars (4351 psig). The cylinder is designed in accordance with the ISO 11119-2 Standard ("Gas cylinders of composite construction - Specification and test methods - Part 2: Fully wrapped fiber reinforced composite gas cylinders with load-sharing metal liners"), except that:

Section 6.1 Liner materials. The cylinder liner is made of two carbon steel domes that are joined with one circumferential laser beam weld.

August 12, 2015

b. TESTING - The cylinders must be tested in accordance with the ISO 11119-2 prototype design requirements except that:

Section 8.5.4 *Cylinder burst test.* The minimum required burst pressure is 3 times the marked service pressure marked on the cylinder.

Section 8.5.11 *Salt water immersion test* - Not required.

Section 8.5.13 *High temperature creep test* - Not required.

c. BATCH TESTING - All batch testing and inspection must be in accordance with ISO 11119-2.

d. MARKING - The cylinders must be marked in accordance with 49 CFR § 178.71(o) except that the marking must contain the special permit number "DOT-SP 15788" in lieu of the ISO Standard.

e. REQUALIFICATION - Cylinders must be requalified at least once every five (5) years in accordance with the procedures described in § 180.207 for ISO 11119-2 cylinders and the Amtrol "IPD10007: Periodic Inspection of HP Composite Cylinders" document, except as noted below. The retester must hold a valid DOT RIN.

- (1) Retesters must inspect for internal defects (e.g. isolated pits, cracks, etc.) in accordance with the latest edition of the CGA Pamphlet C-6.2 "Guidelines for Visual Inspection and Re-qualification of Fiber Reinforced High Pressure Cylinders" document.
- (2) Each cylinder must be retested in accordance with the aforementioned Amtrol document, with the exception that the test pressure must be held for a minimum of 3 minutes without any loss of pressure.
- (3) Reinspection markings must be applied on a label securely and permanently affixed to the jacket of the cylinder near the original test date. The lettering height must be at least 0.0625 inch (1.6 mm). Metal stamping of the composite is prohibited.

August 12, 2015

- (4) Persons who perform inspection and testing of cylinders subject to this special permit must comply with § 180.205(b) and with all the terms and conditions of this special permit.

f. OPERATIONAL CONTROLS -

- (1) Cylinders manufactured under this special permit are not authorized for use in underwater applications.

- (2) Any cylinder exhibiting evidence of fire or excessive heat damage may not be retested under the terms of this special permit.

- (3) Cylinders manufactured under this special permit are not authorized for use fifteen (15) years after the date of manufacture.

- (4) Transportation of oxygen is only authorized when in accordance with § 175.501.

- (5) Cylinders must be packaged in accordance with § 173.301(a) (9).

8. SPECIAL PROVISIONS:

- a. In accordance with the provisions of Paragraph (b) of § 173.22a, persons may use the packaging authorized by this special permit for the transportation of the hazardous materials specified in paragraph 6, only in conformance with the terms of this special permit.

- b. A person who is not a holder of this special permit, but receives a packaging covered by this special permit, may reoffer it for transportation provided no modification or change is made to the packaging and it is offered for transportation in conformance with this special permit and the HMR.

- c. A current copy of this special permit must be maintained at each facility where the package is offered or reoffered for transportation.

- d. Each packaging manufactured under the authority of this special permit must be either (1) marked with the name of the manufacturer and location (city and state) of the facility at which it is manufactured or (2) marked with a

August 12, 2015

registration symbol designated by the Office of Hazardous Materials Special Permits and Approvals for a specific manufacturing facility.

- e. A current copy of this special permit must be maintained at each facility where the packaging is manufactured under this special permit. It must be made available to a DOT representative upon request.
9. MODES OF TRANSPORTATION AUTHORIZED: Motor vehicle, rail freight, cargo vessel, cargo aircraft only, and passenger aircraft (see paragraph 7.c.(4) for restrictions).
10. MODAL REQUIREMENTS: A current copy of this special permit must be carried aboard each cargo vessel, aircraft or motor vehicle used to transport packages covered by this special permit. The shipper must furnish a copy of this special permit to the air carrier before or at the time the shipment is tendered.
11. COMPLIANCE: Failure by a person to comply with any of the following may result in suspension or revocation of this special permit and penalties prescribed by the Federal hazardous materials transportation law, 49 U.S.C. 5101 et seq:
- o All terms and conditions prescribed in this special permit and the Hazardous Materials Regulations, 49 CFR Parts 171-180.
 - o Persons operating under the terms of this special permit must comply with the security plan requirement in Subpart I of Part 172 of the HMR, when applicable.
 - o Registration required by § 107.601 et seq., when applicable.

Each "Hazmat employee", as defined in § 171.8, who performs a function subject to this special permit must receive training on the requirements and conditions of this special permit in addition to the training required by §§ 172.700 through 172.704.

No person may use or apply this special permit, including display of its number, when this special permit has expired or is otherwise no longer in effect.

Under Title VII of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU)—"The Hazardous Materials Safety and Security Reauthorization Act of 2005" (Pub. L. 109-59), 119 Stat. 1144 (August 10, 2005), amended the Federal hazardous materials transportation law by changing the term "exemption" to "special permit" and authorizes a special permit to be granted up to two years for new special permits and up to four years for renewals.

12. REPORTING REQUIREMENTS: Shipments or operations conducted under this special permit are subject to the Hazardous Materials Incident Reporting requirements specified in 49 CFR §§ 171.15 Immediate notice of certain hazardous materials incidents, and 171.16 Detailed hazardous materials incident reports. In addition, the grantee(s) of this special permit must notify the Associate Administrator for Hazardous Materials Safety -- OHMSPA, in writing, of any incident involving a package, shipment or operation conducted under terms of this special permit.

Issued in Washington, D.C.:



for Dr. Magdy El-Sibaie
Associate Administrator for Hazardous Materials Safety

Address all inquiries to: Associate Administrator for Hazardous Materials Safety, Pipeline and Hazardous Material Safety Administration, U.S. Department of Transportation, East Building PHH-30, 1200 New Jersey Avenue, Southeast, Washington, D.C. 20590.

Copies of this special permit may be obtained by accessing the Hazardous Materials Safety Homepage at http://hazmat.dot.gov/sp_app/special_permits/spec_perm_index.htm Photo reproductions and legible reductions of this special permit are permitted. Any alteration of this special permit is prohibited.

PO: BMOORE/kah